

REMARKS

Please reconsider the application in view of the above amendment and the following remarks. Applicant thanks the Examiner for carefully considering this application.

Disposition of Claims

Claims 15-24 and 28-51 are pending in the application. Claims 15-24, 34, 35, 38-46, 48, 49, and 51 are withdrawn from consideration. Claims 38 and 47 are independent. The remaining claims depend, directly or indirectly, from claims 38 and 47. Applicant notes that claims 49 and 51, which were elected by Applicant for continued prosecution in Response to the Restriction Requirement dated February 17, 2005, were subsequently, and mistakenly, withdrawn by Examiner Watts as being drawn to a non-elected species. Applicant respectfully requests reentry of the subject matter of these withdrawn claims via entry of the amendment to claim 47.

Claim Amendments

Claim 47 has been amended by way of this reply to include the subject matter originally presented in claim 49, which currently stands as withdrawn. No new matter has been added by way of this amendment.

Rejections under 35 U.S.C. § 102

Claim 47 stands rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,513,728 issued to Hudson, et al. ("Hudson"). This rejection is respectfully traversed.

Claim 47 recites a method of forming a drill bit structure comprising machining a plurality of holes in preselected locations in the drill bit structure, positioning a spacer insert in

each of the plurality of holes, applying a hardfacing material over at least a portion of an outer surface of the drill bit structure, removing the plurality of spacer inserts from the plurality of holes, enlarging the plurality of machined holes to a selected diameter so as to enable disposition of drilling inserts therein, and positioning drilling inserts in each of the plurality of enlarged holes.

Hudson discloses a method for manufacturing an apparatus wherein a hole within the surface of the apparatus is plugged with a rod, and hardfacing material is applied to the surface around the plug. A scraping tool is then inserted over the rod and rotated to remove an annular area of hardfacing material adjacent and encircling the rod. Once the hardfacing material immediately surrounding the hole and rod has been removed, heat is applied to the remaining hardfacing material. The rod is then removed from the hole so that an insert may be pressed therein.

Hudson fails to disclose enlarging the plurality of machined holes, after applying the hardfacing material and removing the plurality of spacer inserts from the machined holes, to a selected diameter so as to enable disposition of drilling inserts therein, and positioning drilling inserts in each of the plurality of enlarged holes. The present invention, as recited in claim 47 as amended, advantageously allows for a drill bit, specifically the areas between drilling inserts which are highly susceptible to erosion due to exposure to drilling fluids and cuttings, to be adequately protected. In particular, erosion in these areas can lead to loss of inserts and/or roller cone cracking between the inserts. As recited in claim 47, the use of spacer inserts in applying hardfacing material may allow for the entire surface of the cone that surrounds the drilling inserts to be covered with hardfacing material to extend the longevity and performance of the drill bit, especially in harsh drilling conditions. Because the hardfacing material does not adhere

to the spacers in the same manner as it adheres to the surface of the drill bit structure, the speed of applying the hardfacing material may be advantageously increased as the operator does not have to spend as much time avoiding application of the hardfacing materials to certain areas. Additionally, the use of spacer inserts in applying hardfacing material, as recited in claim 47, may also advantageously prevent distortion of hold geometry that may otherwise result from the hardfacing and subsequent heat treatments.

In contrast, Hudson teaches a cutting structure in which the annular area surrounding the drilling inserts is free of hardfacing material. Hudson explains that leaving the area around the plug free of hardfacing allows the cutting inserts to be retained by the tension generated in the cutter member as the inserts are pressed therein (col 4, lines 56-62). Hudson also discloses that in order to further ensure the necessary tension force is maintained, a scraping tool (*see* Hudson Figure 4-C) is used after hardfacing material application to remove any hardfacing material in the annular area around the plug. Specifically, Hudson maintains that hardfacing the complete surface would destroy the ability of the cutter member to provide the tension force necessary to maintain the insert and would also result in stress cracks (col 5, lines 36-39). While Hudson teaches chamfering the area surrounding the hole, this is *not* a teaching of enlarging the machined holes to a selected diameter so that the drilling inserts may be placed therein, as recited in claim 47. Rather, the small chamfer is placed in the same area in which there is no hardfacing material remaining without changing the diameter of the hole.

In view of the above, Hudson fails to disclosed the present invention as recited in claim 47 as amended. Thus, claim 47 as amended is patentable over Hudson. Dependent claims are allowable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Rejections under 35 U.S.C. § 103

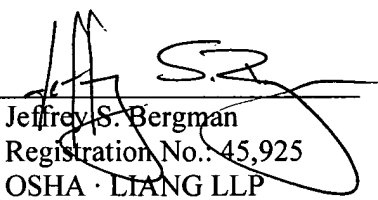
Claims 28-31, 36, 37, and 50 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hudson in view of U.S. Patent Publication No. 2002/0035895 ("Davies") which issued as U.S. Patent No. 6,601,475. The Applicant respectfully notes that Davies is a § 102(e) reference and that both the present application and Davies have been assigned to the present assignee, Smith International, Inc. Thus, under 35 U.S.C. § 103(c), Davies cannot be used as the basis for a § 103 rejection. Accordingly, withdrawal of this rejection is respectfully requested.

Conclusion

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 05516/106002).

Dated: March 24, 2006

Respectfully submitted,

By 
Jeffrey S. Bergman
Registration No. 45,925
OSHA · LIANG LLP
1221 McKinney St., Suite 2800
Houston, Texas 77010
(713) 228-8600
(713) 228-8778 (Fax)
Attorney for Applicant